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EXAMINER	
LAO, LUN S	

ART UNIT	PAPER NUMBER
2615	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/807,885	RAMA ET AL.	
	Examiner	Art Unit	
	Lun-See Lao	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12-05-2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. This action is in response to the applicant's remarks filed on 10-29-2007. Claims 1-35 are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of tile reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-3, 5, 7, 9-13, 15, 18-21, 23-24, 26-29, 32, and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 6044336 to Marmarelis et al. (hereafter as Marmarelis).

Regarding Claim 1, Marmarelis discloses a method, Comprising: detecting sound with a sensor to generate a corresponding sensor signal (abstract; Fig. 1); generating data with the sensor signal in accordance with a maximum likelihood estimator (abstract; summary; column 3, lines 2-47; Fig. 1; column 4, line 10 to column 5, line 13); and filtering the data with an order-statistics filter to provide an estimate of reverberation time (abstract; Fig. 1; column 4, line 10 to column 5, line 13).

Regarding Claim 2, Marmarelis discloses iteratively determining a decay time parameter and a power parameter during execution of said generating (abstract; Fig. 1; column 4, line 10 to column 5, line 13).

Regarding Claim 3, Marmarelis discloses providing the reverberation time to one or more of a hearing assistance data processing routine, a voice recognition data processing routine, a hands-free telephony data processing routine, a teleconference data processing routine, and a sound level evaluation data processing routine (abstract; Fig. 1).

Regarding Claim 5, Marmarelis discloses a method, comprising: detecting sound with a sensor to generate a corresponding sound signal (abstract; Fig. 1); iteratively determining two or more values with a maximum likelihood function to evaluate one or more reverberation characteristics of an acoustic environment, one of the values corresponding to a time-constant parameter and another of the values corresponding to

a diffusive power parameter (abstract; Fig. 1; column 4, line 10 to column 5, line 13); and providing an estimate corresponding to reverberation time of the acoustic environment (abstract; Fig. 1; column 4, line i0 to column 5, line 13).

Claim 7 is essentially similar to Claim 3 and is rejected for the reasons stated above apropos to Claim 3.

Regarding Claim 9, Marmarelis discloses said providing includes filtering the reverberation time estimations with an order-statistics filter to select the estimate corresponding to reverberation of the acoustic environment (abstract; Fig. 1 ; column 4, line 10 to column 5, line 13).

Claim 10 is essentially similar to Claims 1 and 5 and is rejected for the reasons stated above apropos to Claims 1 and 5.

Regarding Claim 11, Marmarelis discloses said selecting includes filtering the estimations (abstract; Fig. 1; column 4, line 10 to column 5, line 13).

Regarding Claim 12, Marrnarelis discloses said filtering is performed with an order-statistics filter (abstract; Fig. 1; column 4, line 10 to column 5, line 13).

Regarding Claim 13, Marmarelis discloses said determining includes iteratively calculating each of at least two values, a first one of the values corresponding to a decay time and a second one of the values corresponding to diffusive power (abstract; Fig. 1; column 4, line 10 to column 5, line 13).

Claim 15 is essentially similar to Claim 3 and is rejected for the reasons stated above apropos to Claim 3.

Claim 18 is essentially similar to Claims 1, 5, and 10 and is rejected for the reasons stated above apropos to Claims 1, 5, and 10.

All elements of Claim 19 are comprehended by Claim 18. Claim 19 is reasons for the reason stated above apropos to Claim 18.

All elements of Claim 20 are comprehended by Claim 18. Claim 20 is reasons for the reason stated above apropos to Claim 18.

Claim 21 is essentially similar to Claims 2 and 5 and is rejected for the reasons stated, above apropos to Claims 2 and 5.

Claim 23 is essentially similar to Claim 11 and is rejected for the reasons stated above apropos to Claim 11.

Claim 24 is essentially similar to Claim 3 and is rejected for the reasons stated above apropos to Claim 3.

Claim 26 is essentially similar to Claims 1 and 5 and is rejected for the reasons stated above apropos to Claims 1 and 5.

Claim 27 is essentially similar to Claim 20 and is rejected for the reasons stated above apropos to Claim 20.

All elements of Claim 28 are comprehended by Claim 26. Claim 28 is rejected for the reasons stated above apropos to Claim 26.

Claim 29 is essentially similar to Claim 3 and is rejected for the reasons stated above apropos to Claim 3.

Claim 32 is essentially similar to Claims 1, 5, and 10 and is rejected for the reasons stated above apropos to Claims 1, 5, and 10.

Claim 35 is essentially similar to Claim 12 and is rejected for the reasons stated above apropos to Claim 12.

4. Claims 1-16, 18-24, 26-30, and 32-35 are rejected under 35 U.S.C. 102(e) as being anticipated by USPN 7039199 to Rui. (hereafter as Rui).

Regarding Claim 1, Rui discloses a method, comprising: detecting sound with a sensor to generate a corresponding sensor signal (abstract; Figs. 1-4 and 12; column 11, line 52 to column 12, line 10); generating data with the sensor signal in accordance with a maximum likelihood estimator (abstract; Figs. 1-4 and 12; column 11, line 52 to column 12, line 10; column 15, line 55 to column 16, line 36; column 18, line 66 to column 19, line 15); and filtering the data with an order-statistics filter to provide an estimate of reverberation time (abstract; Figs. 1-4 and 12; column 11, line 52 to column 12, line 10; column 15, line 55 to column 16, line 36; column 18, line 66 to column 19, line 15; column 21, lines 3-31).

Regarding Claim 2, Rui discloses iteratively determining a decay time parameter and a power parameter during execution of said generating (abstract; Figs. 1-4 and 12; column 11, line 52 .to column 12, line 10; column 15, line 55 to column .16, line 36; column 18, line 66 to column 19, line 15).

Regarding Claim 3, Rui discloses providing the reverberation time to one or more of a hearing assistance data processing routine, a voice recognition data processing routine, a hands-free telephony data processing routine, a teleconference data

processing routine, and a sound level evaluation data processing routine (abstract; Figs. 1-4 and 12; column 8, lines 6-37).

Regarding Claim 4, Rui discloses said generating includes calculating a number of reverberation time parameter estimations with the maximum likelihood estimator, the estimations each being calculated as a function of a sequence of sound observations, over a different time window (abstract; Figs. 1-4 and 12; column 11, line 52 to column 12, line 10; column 12, lines 42-50; column 15, line 55 to column 16, line 36; column 18, line 66 to column !9, line 15; column 20, lines 13-32).

Regarding Claim 5, Rui discloses a method, comprising: detecting sound with a sensor to generate a corresponding sound signal (abstract; Figs. 1-4 and 12; column 11, line 52 to column 12, line 10); iteratively determining two or more values with a maximum likelihood function to evaluate one or more reverberation characteristics of an acoustic environment, one of the values corresponding to a time-constant parameter and another of the values corresponding to a diffusive power parameter (abstract; Figs. 1-4 and 12; column 11, line 52 to column 12, line 10; column 15, line 55 to column 16, line 36; column 18, line 66 to column 19, line 15); and providing an estimate corresponding to reverberation time of the acoustic environment (abstract; Figs. 1-4 and 12; column 11, line 52 to column 12, line 10; column 15, line 55 to column 16, line 36; column 18, line 66 to column 19, line 15).

Regarding Claim 6, Rui discloses said iteratively determining is performed for each of a number of different frequency ranges of the sound and includes calculating a reverberation time estimate for each of the different frequency ranges (abstract; Figs. 1-

4 and 12; column 11, line 52 to column 12, line 10; column 12, lines 42-50; column 15, line 55 to column 16, line 36; column 18, line 66 to column 19, line 15; column 20, lines 13-32).

Claim 7 is essentially similar to Claim 3 and is rejected for the reasons stated above apropos to Claim 3.

Claim 8 is essentially similar to Claim,4 and is rejected for the reasons stated above apropos to Claim 4.

Regarding Claim 9, Rui discloses said providing includes filtering the reverberation time estimations with an order-statistics filter to select the estimate corresponding to reverberation of the acoustic environment (abstract; Figs. 1-4 and 12; column 11, line 52 to column 12, line 10; column 15, line 55 to column 16, line 36; column 18, line 66 to column 19, line 15).

Claim 10 is essentially similar to Claims 1 and 5 and is rejected for the reasons stated above apropos to Claims 1 and 5.

Regarding Claim 11, Rui discloses said selecting includes filtering the estimations (abstract; Figs. 1-4 and 12; column 11, line 52 to column 12, line 10; column 15, line 55 to column 16, line 36; column 18, line 66 to column 19, line 15; column 21, lines 3-31).

Regarding Claim 12, Rui discloses said filtering is performed with an order-statistics filter (abstract; Figs. 1-4 and 12; column 11, line 52 to column 12, line 10; column 15, line 55 to.column 16, line 36; column 18, line 66 to column 19, line 15; column 21, lines 3-31).

Regarding Claim 13, Rui discloses said determining includes iteratively calculating each of at least two values, a first one of the values corresponding to a decay time and a second one of the values corresponding to diffusive-power (abstract; Figs. 1-4 and 12; column 11, line 52 to column 12, line 10; column 15, line 55 to column 16, line 36; column 18, line 66 to column 19, line 15).

Claim 14 is essentially similar to Claim 6 and is rejected for the reasons stated above apropos to Claim 6.

Claim 15 is essentially similar to Claim 3 and is rejected for the reasons stated above apropos to Claim 3.

Claim 16 is essentially similar to Claim 8 and is rejected for the reasons stated above apropos to Claim 8.

Claim 18 is essentially similar to Claims 1, 5, and 10 and is rejected for the reasons stated above apropos to Claims 1, 5, and 10.

All elements of Claim 19 are comprehended by Claim 18. Claim 19 is reasons for the reason stated above apropos to Claim 18.

All elements of Claim 20 are comprehended by Claim 18. Claim 20 is reasons for the reason stated above apropos to Claim 18.

Claim 21 is essentially similar to Claims 2 and 5 and is rejected for the reasons stated above apropos to Claims 2 and 5.

Claim 22 is essentially similar to Claim 6 and is rejected for the reasons stated above apropos to Claim 6.

Claim 23 is essentially similar to Claim 11 and is rejected for the reasons stated above apropos to Claim 11.

Claim 24 is essentially similar to Claim 3 and is rejected for the reasons stated above apropos to Claim 3.

Claim 26 is essentially similar to Claims 1 and 5 and is rejected for the reasons stated above apropos to Claims 1 and 5.

Claim 27 is essentially similar to Claim 20 and is rejected for the reasons stated above apropos to Claim 20.

All elements of Claim 28 are comprehended by Claim 26. Claim 28 is rejected for the reasons stated above apropos to Claim 26.

Claim 29 is essentially similar to Claim 3 and is rejected for the reasons stated above apropos to Claim 3.

Claim 30 is essentially similar to Claims 1 and 4 and is rejected for the reasons stated above apropos to Claims 1 and 4.

Claim 32 is essentially similar to Claims 1, 5, and 10 and is rejected for the reasons stated above apropos to Claims 1, 5, and 10.

Regarding Claim 33, Rui discloses the logic includes a number of software instructions and the device includes a computer-readable memory storing the software instructions (abstract; Figs. 1-4 and 12; column 9, line 7 to column 11, line 47).

Regarding Claim 34, Rui discloses the device includes one or more parts of a computer network and the logic is encoded in one or more signals by the device (abstract; Figs. 1-4 and 12; column 9, line 7 to column 11, line 47).

Claim 35 is essentially similar to Claim 12 and is rejected for the reasons stated above apropos to Claim 12.

5. Claims 1-3, 5, 7, 10-13, 15, 18-21, 23-24, 26-29, and 32-35 are rejected under 35 U.S.C. 102(a) as being anticipated by USPN 7123727 to Elko et al. (hereafter as Elko).

Regarding Claim 1, Elko discloses a method, comprising:
detecting sound with a sensor to generate a corresponding sensor signal (abstract; Figs. 1 and 7; column 6, line 55 to column 7, line 3); generating data with the sensor signal in accordance with a maximum likelihood estimator (abstract; Figs. 1 and 7; column 6, lines 5-16; column 6, line 55 to column 7, line 3); and filtering the data with an order-statistics filter to provide an estimate of reverberation time (abstract; Figs. 1 and 7; column 6, lines 5-16; column 6, line 55 to column 7, line 42).

Regarding Claim 2, Elko discloses iteratively determining a decay time parameter and a power parameter during execution of said generating (abstract; Figs. 1 and 7; column 6, lines 5-16; column 6, line 55 to column 7, line 42).

Regarding Claim 3, Elko discloses providing the reverberation time to one or more of a hearing assistance data processing routine, a voice recognition data processing routine, a hands-free telephony data processing routine, a teleconference data processing routine, and a sound level evaluation data processing routine (abstract; Figs. 1 and 7; column 1, lines 16-62).

Regarding Claim 5, Elko discloses a method, comprising: detecting sound with a sensor to generate a corresponding sound signal (abstract; Figs. 1 and 7; column 6, line

55 to column 7, line 3); iteratively determining two or more values with a maximum likelihood function to evaluate one or more reverberation characteristics of an acoustic environment, one of the values corresponding to a time-constant parameter and another of the values corresponding to a diffusive power parameter (abstract; Figs. 1 and 7; column 6, lines 5- 16; column.6, line 55 to column 7, line 42); and providing an estimate corresponding to reverberation time of the acoustic environment (abstract; Figs. 1 and 7; column 6, lines 5-16; column 6, line 55 to column 7, line 42).

Claim 7 is essentially similar to Claim 3 and is rejected for the reasons stated above apropos to Claim 3. 9. Claim 10 is essentially similar to Claims 1 and 5 and is rejected for the reasons stated above apropos to Claims 1 and 5.

Regarding Claim 11, Elko discloses rein said selecting includes filtering the estimations (abstract; Figs. 1 and 7; column 6, lines 5-16; column 6, line 55 to column 7, line 42).

Regarding Claim 12, Elko discloses wherein said filtering is performed with an order-statistics filter (abstract; Figs. 1 and 7; column 6, lines 5-16; column 6, line 55 to column 7, line 42).

Regarding Claim 13, Elko discloses said determining includes iteratively calculating each of at least two values, a first one of the values corresponding to a decay time and a second one of the values corresponding to diffusive power (abstract; Figs. 1 and 7; column 6, lines 5-16; column 6, line 55 to column 7, line 42).

Claim 15 is essentially similar to Claim 3 and is rejected for the reasons stated above apropos to Claim 3.

Claim 18 is essentially similar to Claims 1, 5, and 10 and is rejected for the reasons stated above apropos to Claims 1, 5, and 10.

All elements of Claim 19 are comprehended by Claim 18. Claim 19 is reasons for the reason stated above apropos to Claim 18.

All elements of Claim 20 are comprehended by Claim 18. Claim 20 is reasons for the reason stated above apropos to Claim 18.

Claim 21 is essentially similar to Claims 2 and 5 and is rejected for the reasons stated above apropos to Claims 2 and 5.

Claim 23 is essentially similar to Claim 11 and is rejected for the reasons stated above apropos to Claim 11.

Claim 24 is essentially similar to Claim 3 and is rejected for the reasons stated above apropos to Claim 3.

Claim 26 is essentially similar to Claims 1 and 5 and is rejected for the reasons stated above apropos to Claims 1 and 5.

Claim 27 is essentially similar to Claim 20 and is rejected for the reasons stated above apropos to Claim 20.

All elements of Claim 28 are comprehended by Claim 26. Claim 28 is rejected for the reasons stated above apropos to Claim 26.

Claim 29 is essentially similar to Claim 3 and is rejected for the reasons stated above apropos to Claim 3.

Claim 32 is essentially similar to Claims 1, 5, and 10 and is rejected for the reasons stated above apropos to Claims 1, 5, and 10.

Regarding Claim 33, Elko discloses the logic includes a number of software instructions and the device includes a computer-readable memory storing the software instructions (abstract; Figs. 1 and 7; column 11, lines 25-52).

Regarding Claim 34, Elko discloses the device includes one or more parts of a computer network and the logic is encoded in one or more signals by the device (abstract; Figs. 1 and 7; column 11, lines 25-52).

Claim 35 is essentially similar to Claim 12 and is rejected for the reasons stated above apropos to Claim 12.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 17, 25, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over by USPN 7039199 to Rui.

Claim 17, Rui does not expressly disclose adaptively changing the duration of the different time windows.

However, it is well known in the art to adaptively changing the duration of the different time windows in order to provide flexibility to have different time windows which provide the desired results.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify Rui to adaptively changing the duration of the different time windows in order to provide flexibility to have different time windows which provide the desired results.

Claim 25 is essentially similar to Claim 17 and is rejected for the reasons stated above apropos to Claim 17.

Claim 31 is essentially similar to Claims 6 and 17 and is rejected for the reasons stated above apropos to Claims 6 and 17.

Response to Arguments

8. Applicant's arguments filed 10-29-2007 have been fully considered but they are not persuasive.

Applicant argued, regarding Marmarelis, that "[i]n the asserted reference, "reverberation" only appears about three times and is always lumped together with other terms in the conglomerate "clutter/reverberation/noise", "this reference treats reverberation as a statistical error source akin to noise -- never disclosing, teaching or suggesting how a "reverberation time" might be estimated", "in regard to the rejection of independent claim 1, the cited passages fail to disclose an order statistics filter", "in the citation against claim 5, there is no disclosure, teaching, or suggestion of "iteratively determining two or more values...where one of the values corresponds to a time- constant parameter and another of the values corresponds to a diffusive power parameter." (Remarks, pages 5-6).

The examiner respectfully disagrees. As to the number of occurrences of "reverberation", Marmarelis, in its entirety, is directed to the optimal estimates of disturbances, including reverberation as well as clutter and noise. See Marmarelis, sections of abstract, background, objects, summary, description and claims. Viewing Marmarelis as a whole, most of the citations of reverberation is not in the clutter/reverberation/noise format. Further, Marmarelis clearly distinguishes the modeling and processing of reverberation, clutter and noise, as shown, for example, in col. 5, lines 2-12. Regarding claim 1, Marmarelis teaches filtering the data with an order-statistics filter to provide an estimate of reverberation time (abstract; summary; column 3, lines 2-47; Fig. 1; column 4, line 10 to column 5, line 13, column 7, lines 22-25). It is noted that the modeling/filtering and estimations of Marmarelis are based on the statistics of the disturbances (to which reverberation is a major contributor) and uses parameter fitting, ie, meeting the order statistics filter as claimed. Regarding claim 5, Marmarelis teaches iteratively determining two or more values with a maximum likelihood function to evaluate one or more reverberation characteristics of an acoustic environment, one of the values corresponding to a time-constant parameter and another of the values corresponding to a diffusive power parameter (abstract; summary; column 3, lines 2-47; Fig. 1; column 4, line 10 to column 5, line 67) and note that the maximizing step of Marmarelis applies an iterative gradient-descent algorithm and uses constant as well as diffusive/adaptive parameters (col. 5, lines 13-67).

As applicant's arguments regarding Rui, Rui teaches a method, comprising: detecting sound with a sensor to generate a corresponding sensor signal (abstract;

Figs. 1-4 and 12; column 11, line 52 to column 12, line 10); generating data with the sensor signal in accordance with a maximum likelihood estimator (abstract; Figs. 1-4 and 12; column 11, line 52 to column 12, line 10; column 15, line 55 to column 16, line 36; column 18, line 66 to column 19, line 15); and filtering the data with an order-statistics filter to provide an estimate of reverberation time (abstract; Figs. 1-4 and 12; column 11, line 52 to column 12, line 10; column 15, line 55 to column 16, line 36; column 18, line 66 to column 19, line 15; column 21, lines 3-31). Rui also teaches a method, comprising: detecting sound with a sensor to generate a corresponding sound signal (abstract; Figs. 1-4 and 12; column 11, line 52 to column 12, line 10); iteratively determining two or more values with a maximum likelihood function to evaluate one or more reverberation characteristics of an acoustic environment, one of the values corresponding to a time-constant parameter and another of the values corresponding to a diffusive power parameter (abstract; Figs. 1-4 and 12; column 11, line 52 to column 12, line 10; column 15, line 55 to column 16, line 36; column 18, line 66 to column 19, line 15); and providing an estimate corresponding to reverberation time of the acoustic environment (abstract; Figs. 1-4 and 12; column 11, line 52 to column 12, line 10; column 15, line 55 to column 16, line 36; column 18, line 66 to column 19, line 15). Thus Rui meets the claimed limitations of claims 1 and 5.

As applicant's arguments regarding Elko, Elko teaches: detecting sound with a sensor to generate a corresponding sensor signal (abstract; Figs. 1 and 7; column 6, line 55 to column 7, line 3); generating data with the sensor signal in accordance with a maximum likelihood estimator (abstract; Figs. 1 and 7; column 6, lines 5-16; column 6,

line 55 to column 7, line 3); and filtering the data with an order-statistics filter to provide an estimate of reverberation time (abstract; Figs. 1 and 7; column 6, lines 5-16; column 6, line 55 to column 7, line 42). Elko further teaches iteratively determining two or more values with a maximum likelihood function to evaluate one or more reverberation characteristics of an acoustic environment, one of the values corresponding to a time-constant parameter and another of the values corresponding to a diffusive power parameter (abstract; Figs. 1 and 7; column 6, lines 5- 16; column.6, line 55 to column 7, line 42); and providing an estimate corresponding to reverberation time of the acoustic environment (abstract; Figs. 1 and 7; column 6, lines 5-16; column 6, line 55 to column 7, line 42). Thus Rui meets the claimed limitations of claims 1 and 5.

Therefore, applicant's arguments are not persuasive.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ando (US PAT. 5,619,579) is cited to show other related determining reverberation time.

11. Any response to this action should be mailed to:

Mail Stop ____(explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Facsimile responses should be faxed to:
(571) 273-8300

Hand-delivered responses should be brought to:
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao, Lun-See whose telephone number is (571) 272-7501. The examiner can normally be reached on Monday-Friday from 8:00 to 5:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin, can be reached on (571) 272-7848.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao, Lun-See L.S.
Patent Examiner
US Patent and Trademark Office
Knox
571-272-7501

Date 01-18-2008

VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600